

2. FAMILY SOLANACEAE

Classification

Kingdom	–	Plantae
Division	–	Angiospermae
Class	–	Dicotyledonae
Sub-Class	–	Gamopetalae
Order	–	Polymoniales
Family	–	Solanaceae

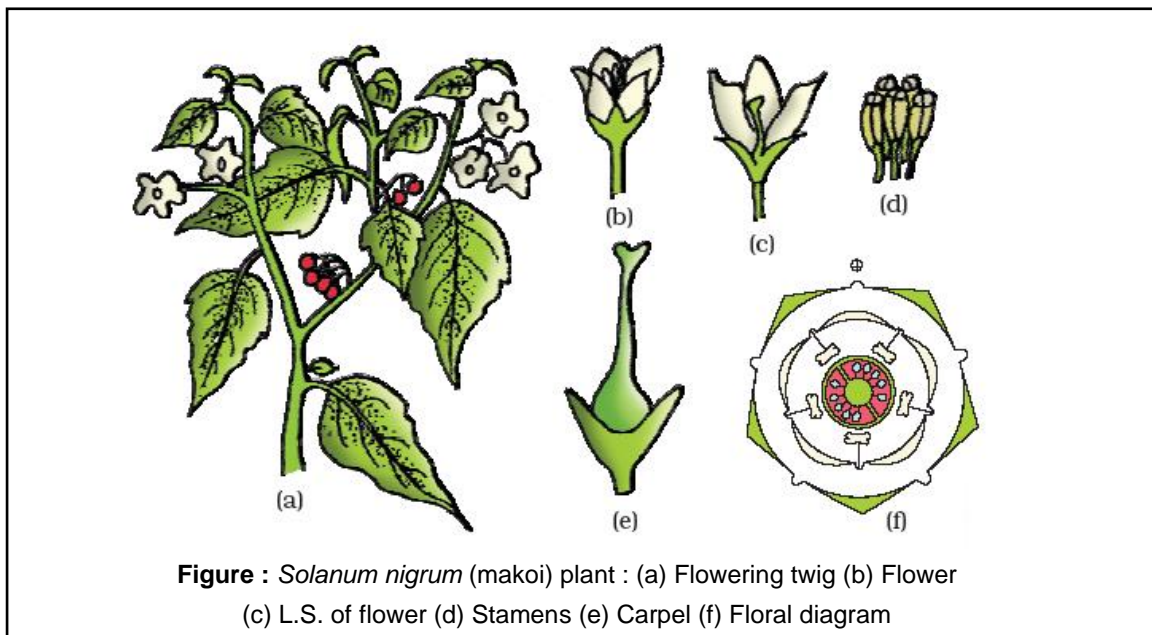


Figure : *Solanum nigrum* (makoi) plant : (a) Flowering twig (b) Flower
(c) L.S. of flower (d) Stamens (e) Carpel (f) Floral diagram

Distribution :

90 genera and 2000 species include in this family. Plants are mostly found in Tropical and temperate region.

Normally known as potato family.

Habit :

Plants are mostly **Annual or perennial herbs**, e.g. *Nicotiana tabacum*, *Solanum nigrum* or **shrubs** e.g. *Cestrum nocturnum*, **trees and climbers are rare**.

Root :

Tap root system.

Stem :

herbaceous rarely woody, aerial; erect, cylindrical, branched, solid or hollow, hairy or glabrous, underground stem in potato (*Solanum tuberosum*)

Leaf :

Alternate, simple, rarely pinnately compound, exstipulate; venation reticulate

Inflorescence : Usually Cymose - In which the tip of the main axis terminates in a flower.

(a) **Monochasial scorpioid Cyme** - e.g. *Atropa belladonna*

(b) **Monochasial Helicoid Cyme** - e.g. *Solanum*

Flower :

Pedicellate, bracteate or Ebracteate, bisexual, Actinomorphic, complete, hypogynous, Pentamerous.

Calyx :

5, Gamosepalous aestivation valvate, **Persistent- (a) Accrescent- enlarged balloon like present on fruit e.g. *Physalis*, *Withania*, (b) Marescent-dry & hard calyx present on fruit e.g. *S.melongena***, odd sepal posterior.

Corolla:

5, Gamopetalous, valvate or imbricate aestivation.

Androecium:

5, Polyandrous, **Epipetalous**, Anther ditheous, basifixed.

Gynoecium:

Bicarpellary, syncarpous. Bilocular, **Axile placentation. Placenta is swollen, ovary situated on the thalamus obliquely. It is multilocular in *datura* and tomato due to the formation of false septum.**

Fruit:

Berry : Single fleshy and non-dehiscent e.g. **Tomato, Brinjal, Chillies, *Physalis* or capsule .**

Seed:

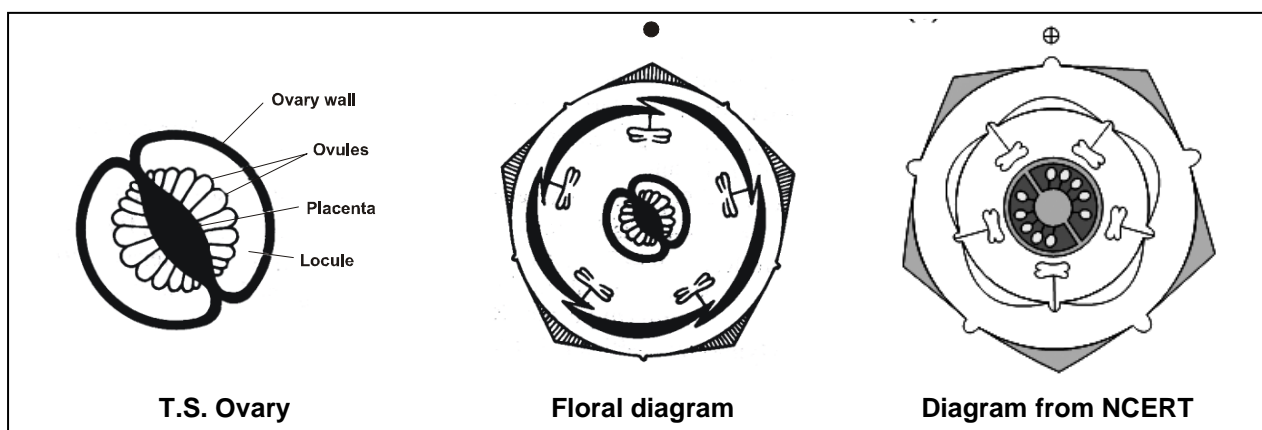
Many, endospermic.

Pollination:

Normally Entomophily

Floral formula: $\text{EBr } \oplus \text{ } \frac{\text{K}_{(5)} \text{C}_{(5)} \text{A}_5 \text{G}_{(2)}}{\text{♀}}$

(AIPMT - 2015)

**Resonate the Concept**

- Above floral diagram of NCERT text book is not completely correct because in the calyx part - odd sepal anterior condition has been indicated but in Solanaceae the odd sepal is posterior that lies near the mother axis.

Economic Importance:

Many plants belonging to this family are source of food (**tomato, brinjal, potato**), spice (**chilli**); medicine (**belladonna, ashwagandha**); fumigatory (**tobacco**); ornamentals (**petunia**).